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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,634	07/11/2003	Yoshihiro Hara	15162/05580	4269
24367	7590	06/30/2005	EXAMINER	
SIDLEY AUSTIN BROWN & WOOD LLP			PERKEY, WILLIAM B	
717 NORTH HARWOOD			ART UNIT	
SUITE 3400			PAPER NUMBER	
DALLAS, TX 75201			2851	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/617,634	HARA, YOSHIHIRO	
	Examiner	Art Unit	
	William B. Perkey	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 19-43 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 19-43 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 17 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

Applicant's arguments, filed June 6, 2005 have been found to be persuasive, and all previous grounds of rejection are withdrawn. However, the patent to Ohnishi et al. (U.S. Patent No. 5,258,694) has come to the examiner's attention. New grounds of rejection, not necessitated by amendments, are set forth below based on the Ohnishi disclosure. Accordingly, this Office action is not made final.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 19, 21, and 34-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi et al. (U.S. Patent No. 5,258,694) in view of Sugaya et al. (U.S. Patent No. 5,870,634).

Ohnishi, in Fig. 1 discloses a position sensor 17; a target value inputting means 19; a driver 16; and a position servo controller comprising elements 11-15 and 18. The non-frequency parameter of the drive signal is the duty ratio of the output signals of the driving circuit 16, which is determined by the signal CP put out by the CPU. The duty-ratio is based on the difference between the detected position of the movable member and the desired target position. The oscillator 11, of the servo position controller, drives the motor at its resonant frequency or basic driving frequency. Thus, Ohnishi discloses the claimed invention except for a calculator for calculating the control target position. Instead, Ohnishi inputs the target value by a keyboard. Sugaya discloses a camera shake correction system that uses an angular velocity sensor to

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determine the amount of camera shake and finds the difference from the detected position of the shake compensation lens to drive the ultrasonic motor displacing the lens to a desired target position in Fig. 10. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the vibration type actuator device of Ohnishi in a camera shake compensation system using an angular velocity sensor to calculate the amount of camera shake in order to obtain the desirable feature of obtaining camera shake compensation with precise control of the shake compensating element. The calculated amount of camera shake is used as the target position fed into the CPU 15 of Ohnishi. The amount of camera shake detection circuit may be constructed using a microprocessor which would calculate the target position on periodic basis or could be an analog circuit which continuously outputs a target position.

3. Claims 20, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi et al. (U.S. Patent No. 5,258,694) in view of Hayashi et al. (U.S. Patent No. 6,812,618 B2).

Ohnishi shows the claimed invention, as explained above, except for the non-frequency parameter as a voltage value of the drive signal; or using a look up table to determine the value of the non-frequency parameter. Hayashi discloses a vibration type actuator that uses a look up table to determine desired driving frequency  $f$  of the actuator and the pulse width parameter PW according to the desired speed VC determined from a difference between the target position and the detected position of the movable member in the embodiment of Fig. 1 (see the paragraph bridging columns 4 and 5); or in the embodiment of Fig. 9 the non-frequency parameter is disclosed as a voltage value. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use look up tables in the CPU 15 of Ohnishi to store the

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association of the desired duty cycles to the position difference amount in order to obtain the desirable feature of speeding up the processing time. It would have been obvious to one of ordinary skill in the art to vary the voltage to the driving circuit of Ohnishi, instead of the duty cycle ratio, in order to obtain a desirable alternative.

4. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi et al. (U.S. Patent No. 5,258,694) in view of Senda et al. (U.S. Patent No. 6,437,481 B2).

Ohnishi shows the claimed invention, as explained above, except for temperature correction of the basic driving frequency. Senda et al. discloses a graph in Fig. 2 showing how the speed/frequency plot of a vibration type motor changes with temperature. The resonant frequency is seen as shifting with temperature change in this graph. Senda et al. discloses the use of a look up table to effect temperature compensation. It would have been obvious to one of ordinary skill in the art, at the time of applicant's invention, to provide temperature compensation to the driving frequency put out by the oscillator 11 of Ohnishi in order to maintain the desired driving of the motor at its resonance frequency under varying temperature conditions.

5. Claims 25-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied in numbered paragraphs 2 and 3 above, further in view of Yoshida et al. (U.S. Patent No. 6,512,321 B2).

The rejection in numbered paragraphs 2 and 3, above meets the claimed invention, as explained above, except for the ultrasonic actuator having frequency-speed characteristics that the speed is set at a substantially constant value in a predetermined frequency range; or except for setting the drive frequency lower than a complete resonant frequency. Yoshida et al.

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discloses a focus lens that is position adjusted using an ultrasonic motor. The ultrasonic motor of Yoshida et al. is of the same type motor structure as the actuator shown by applicant. Yoshida et al. discloses similar frequency/speed plots to applicant and also discloses that the drive frequency is controlled over the same range as applicant, including below the complete resonant frequency. It would have been obvious to one of ordinary skill in the art, at the time of applicant's invention, to use a vibration motor of the type shown by Yoshida et al. controlled by the control circuit of Ohnishi in order to obtain a desired alternative vibration actuator, and to drive it slightly below the resonant frequency in order to obtain a desired maximum speed of the motor.

#### **Telephone Numbers**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William B. Perkey whose telephone number is (571) 272-2126. The examiner can normally be reached on Monday-Thursday 7:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 William B. Perkey

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Primary Examiner  
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WBP:wbp